

SECRET

(When Filled In)

R & D CATALOG FORM		DATE
1. PROJECT TITLE/CODE NAME Analytical Plotter		2. SHORT PROJECT DESCRIPTION Stereo Comparator with computer and plotter
3. CONTRACTOR NAME		4. LOCATION OF CONTRACTOR
5. CLASS OF CONTRACTOR Manufacturer		6. TYPE OF CONTRACT Fixed Price
7. FUNDS	8. REQUISITION NO.	9. BUDGET PROJECT NO.
FY 19 \$	NA	NP-M-3
FY 19 65 \$	10. EFFECTIVE CONTRACT DATE (Begin - end)	11. SECURITY CLASS.
FY 19 \$	1 April 1965 - 1 Feb. 1966	A. A. - Uncl. T. - Uncl. W. - Uncl.
12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION DDI/NPIC/P&DS/		
13. REQUIREMENT/AUTHORITY The AP-3 is required to fill the NPIC's need for a stereo film comparator with a self-contained data processing system and a data plotting system for the exploitation of aerial and ground photography.		
14. TYPE OF WORK TO BE DONE Engineering Development		
15. CATEGORIES OF EFFORT		
MAJOR CATEGORY	SUB-CATEGORIES	
Measurement and Rectification Equipment	Photogrammetry	
	Electronics	
	Plotting	
	Mensuration	
16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC. One AP-3 Analytical Plotter complete with special purpose computer, comparator, plotting table, computer programs, and manuals as proposed.		
17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION This program will yield an improved version of the analytical plotter developed for the Air Force (AS-11A). Due to the unique Agency requirements for higher resolution and ground photography, the AP/2 is not considered adequately flexible to meet the NPIC's needs.		
18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required) The NPIC receives a large volume of intelligence photography from very diversified systems requiring either many pieces of specialized photogrammetric equipment to handle the different inputs or an extremely versatile instrument. A modified AP/2 Analytical Plotter (AS-11A) as proposed by the can meet the diversified requirements to process many of the photogrammetric problems now required of the Center.		
19. APPROVED BY AND DATE		
OFFICE	DEPUTY DIRECTOR	DDCI
Declass Review by NGA		

Approved For Release 2005/02/17 : CIA-RDP78B04770A000100110001-9

The proposed hardware will consist of a precision $9\frac{1}{2}$ " X $9\frac{1}{2}$ " stereo comparator, a special-purpose computer, a plotting table and a hard copy and punched tape output. The major improvements the AP/3 will have over the AP/2 are:

- a. Increased magnification and resolution -- the AP/3 will be capable of 100X magnification with a minimum of 400 lines/mm at 100X.
- b. Anamorphic correction -- a 1:2 ratio anamorphic correction will be included in the optical train as a manual option for the operator.
- c. Increased local-area measurement accuracy -- a $1\frac{1}{4}$ micron resolution will be provided, giving a 2 micron RMSE accuracy over areas of up to 2" X 2".
- d. Photography input -- the system shall be capable of stereo plotting and precision measuring from aerial frame, panoramic, and strip photography, and from terrestrial frame photography. Programs for focal lengths from 1" to 48" with photographic formats up to 9" X 9" will be provided (formats over 9" long may be handled as segments). Programs provided will handle terrestrial photography but not aerial strip photography since the equations for strip photography have not been furnished to the contractor to quote on.
- e. Distance measurements -- the system will be capable of providing calculated, three-dimensional ground vector distances.
- f. Increased input/output flexibility -- a 50 character/per second paper tape reader and a teletype, 35 KSR, page printer will be supplied.
- g. X - Y plotter improvements -- servo-drives will be provided to increase the capabilities and accuracy of the plotting table.
- h. Automatic image correlation -- the system will be designed to allow the AP/3 to be retrofitted with an automatic correlation system now under development. If incorporated in the instrument at a later date, this component would give the Center an automatic ground profile and contouring capability for detailed target/complex studies.

The objective of this program is to modify the AP/2 to increase its versatility and performance characteristics for the purpose of handling a wide variety of photographic inputs. The proposed AP/3 is designed specifically to meet the requirements of intelligence photography and is not intended for cartographic application. The flexibility offered by the AP/3 does not currently exist at the NPIC, and no programs are proposed that would duplicate the AP/3 capability. In addition, the AP/3 could be employed to exploit numerous, random, ground photographic inputs which cannot be efficiently handled by the Univac 490 measurement system.

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X1 It is recommended that a contract for [] be negotiated with []
[] for the procurement of an AP/3 Analytical Plotter.
Since approximately 35% of the work will be performed by []
the contract should be handled on an unclassified basis.

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